May 2014

CC174 Sudangrass for Summer Pasture

LeRoy V. Peters

Herman Gorz

CC 174

PRODUCTIVE PASTURES

Sudangrass for Summer Pasture

SUDANGRASS FURNISHES NUTRITIOUS PASTURE IN HOT WEATHER.

- It is always succulent and palatable.
- It grows best in hot weather.
- It withstands drought.
- It is safe to graze when properly managed.
- It should be used to supplement perennial pastures.

EXTENSION SERVICE – UNIVERSITY OF NEBRASKA
COLLEGE OF AGRICULTURE AND U. S. DEPARTMENT
OF AGRICULTURE COOPERATING W. V. LAMBERT,
DIRECTOR, E. W. JANIKE, ASSOC. DIRECTOR

Sudangrass for Summer Pasture

Sudangrass is the most productive, warm-season, temporary pasture crop grown in Nebraska. It is well adapted to all areas of the state and makes rapid growth following planting in late May or early June. Excellent pasture is available during July, August and early September, or until growth is stopped by frost.

Climatic Requirements

Sudangrass is much like corn, in that it grows best under warm conditions. Warm soil and warm weather are both essential for rapid establishment and growth. Thus, the seasonal temperature has an important relationship to the time of seeding. The recommended date of seeding is about two weeks after corn planting time.

Once established, sudangrass is adaptable to both hot and dry weather, which makes it a most dependable pasture crop. However, in very dry years production can be increased with irrigation.

Soil and Fertilizer Requirements

Sudangrass does best on a very fertile loam soil, but successful growth has been attained on almost every type of soil from heavy clay to light sandy soils. Since sudangrass grows rapidly, an adequate amount of moisture and nutrients must be present at all times for maximum production.

Soil tests will determine whether the soil needs (a) lime, (b) phosphorous, or (c) potassium and how much should be applied. The usual recommendation for nitrogen fertilization in Nebraska is 40 to 80 pounds per acre. The fertilization rate which is best for maximum yield should be used.

Culture for Pasture Purposes

Preparation of the Seedbed

Seedbed preparation must be as good for sudangrass as for corn. Spring plowing may be preferred as it helps warm the soil. A firm, well-prepared, weed-free seedbed is necessary for rapid germination and a good stand.

Date of Seeding

Sudangrass should not be planted until the soil has become warm, or about two weeks after corn-planting time. Sudangrass is a warm weather crop and grows slowly as long as the weather is cool. Seeding too early in cold soil results in poor stands and slow growth and en-

courages weed growth. The crop does not seem to recover from the dwarfing effects of cold soils and cool weather, so no advantage is gained by planting before the soil is warm.

Seedings made in late May or early June usually give the best results. Sudangrass usually will be knee-high or higher within five or six weeks after planting.

Method of Seeding

The best method of planting sudangrass for pasture is with a grain drill at a depth of one to one and one-half inches in moist soil. For good stands plant quality seed of high germination which has been treated with a fungicide.

Sudangrass is not recommended for use as a companion crop when seeding grasses or legumes. The rapid growth of the sudan and the tramping of grazing animals are likely to destroy the small seedlings. However, sudangrass residues make an excellent seedbed for the early seeding of permanent warm-season grasses the following year.

Rate of Seeding

The recommended rate of seeding for pasture purposes is 15 to 25 pounds per acre. Sudangrass tillers freely when given ample space and a single plant may produce as many as 100 stems under favorable conditions.

Setting a grain drill for two pecks of wheat to the acre will sow about 20 to 25 pounds of sudangrass seed per acre.

Utilization as Pasture

Sudangrass is most popular as a temporary or supplemental summer pasture crop. It fills an important need in most farming areas in Nebraska. Sudangrass grows when productive, cool-season grasses such as bromegrass are short or lacking. Sudangrass not only has a place in a balanced pasture program in conjunction with cool-season perennial pasture, but it also may supplement native warm-season grasses as well. It is palatable and nutritious and is relished by all livestock.

Pasturing should not begin until the crop is 18 to 24 inches high. Some dairymen divide their sudangrass pasture into two or three fields of such size that they are grazed down quickly.

An 18 to 24-inch regrowth should be attained before regrazing. Such a system allows for maximum production of nutritious forage which is low in prussic acid potential.

The carrying capacity of sudangrass may vary from one or two mature dairy or beef animals per acre per month to as high as five or six. Under Nebraska conditions, the varieties Piper and Wheeler reach maturity by late August to mid-September. These varieties, when rotationally grazed, will grow until frost and yield more than the late maturing varieties.

When to SEED

Field A	Field B	Field C
During 3rd or 4th week of May	10 days later than Field A	10 days later than Field B

How to PASTURE

Field A	Field B	Field C
About July 1 After it is knee high and for 7 to 10 days. Then move livestock to Field B.	Graze for 7 to 10 days. Then move livestock to Field C.	Graze for 7 to 10 days. Then move livestock back to Field A.

Prussic Acid Poisoning

The short, young, dark green growth or regrowth of sudangrass is the portion of the plant which is dangerous to cattle and sheep. Plants which are small because of drought or other adverse growing conditions may cause prussic acid poisoning in ruminant animals.

Regrowth following a killing frost in the fall is dangerous. Although the prussic acid content is not increased by freezing, favorable weather may aid in the development of new shoots which can be high in this acid. Thus, the animals would be poisoned from the regrowth at the base of the plant and not from the frosted sudangrass. Sudangrass which has been frosted may be safely grazed if there is no regrowth.

The amount of prussic acid in sudangrass may also be affected by soil fertility. Soils with a high level of available nitrogen and a low level of phosphorous tend to increase the prussic acid content of sudangrass, while soils with a low level of available nitrogen and a high level of available phosphorous have the opposite effect. Favorable soil fertility and moisture enable the plants to grow rapidly and reach a height of 18 to 24 inches when they can be pastured with comparative safety.

It must be emphasized that there are a number of factors which tend to influence the prussic acid potential of sudangrass. Not only

are there varietal differences, but also environmental differences. The fertility of the soil, the moisture stress of the plants, the stage of plant development, as well as early growth or regrowth after grazing or after frost are of importance. The grazing animal is also a factor. Cattle when very hungry are more likely to be poisoned. All of these factors may contribute to the danger.

Losses of cattle in various parts of Nebraska have been, in some instances, traced to pastures which were planted with noncertified seed of the Sweet sudangrass variety. The planting of certified seed of recommended varieties reduces the possibility of sudangrass stands with plants of high prussic acid potential.

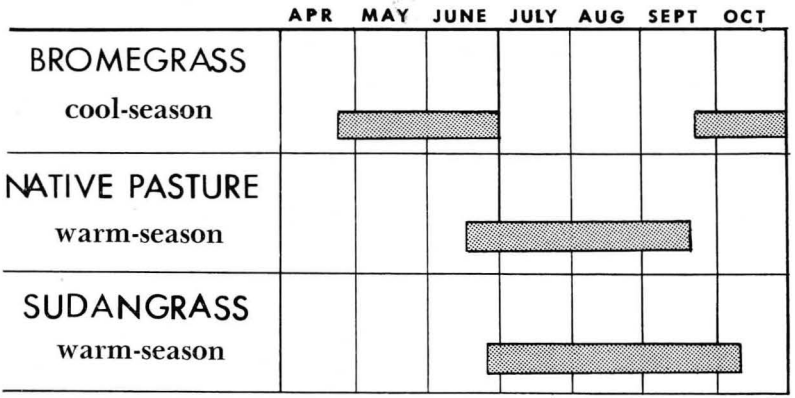
Pasture Program

With proper management, sudangrass can be safely utilized as a pasture crop. When planted in three or more fields, short rotational grazings can be practiced and the danger from young growth will be eliminated. By staggering the dates of planting by a week to ten days, grazing can begin on each field when the crop is 18 to 24 inches in height. Such a rotation system allows for maximum production of nutritious forage. If necessary, the fields may also be irrigated and fertilized after grazing periods. Also, the most efficient use with little loss from tramping may be achieved.

Recommended Varieties

Piper

This variety was developed and released in 1950 by the Wisconsin Agricultural Experiment Station. It is the result of a series of crosses among lines low in prussic acid. The seed is darker than that of Wheeler, since it contains both light and dark colored seeds. Clipping



Sudangrass bridges the gap between the productive periods of cool-season pasture and it may also supplement the native warm-season pasture.

tests at Lincoln, Nebraska show that Piper ranks very close to Wheeler in recovery and total yield. It has been tested in several states where it has given yields comparable to other varieties. The young plants have shown far less prussic acid potential than other varieties.

Wheeler

This variety of sudangrass was selected by Carl Wheeler of Bridgeport, Kansas, from seed received from the U. S. Department of Agriculture. The seed is usually straw colored with a few darker seeds. Wheeler has excellent seedling vigor as well as rapid recovery after clipping. Wheeler is an extremely early variety when allowed to grow to maturity. However, when clipped at the pasture stage (five to six clippings per season) it has given the highest total yield each year from 1954 to 1958 of all entries in tests at Lincoln, Nebraska. The yield at each time of clipping during the summer has also been larger than any of the other varieties. There have been no livestock deaths from prussic acid poisoning reported for Wheeler sudangrass in Nebraska or Kansas.

Sudangrass pasture must have rapid regrowth after grazing and it must be moderately low in prussic acid potential. Piper and Wheeler represent the best combination of these two essentials for safe, nutritious and productive pastures in Nebraska.

This circular is a publication of the **Pasture Improvement Committee** of the **Nebraska College of Agriculture.** It was prepared by LeRoy V. Peters, Herman Gorz, and C. W. Nibler.

Other circulars in this series on Productive Pastures:

CC 164 Using Temporary Pastures
CC 165 Establishing Pastures in Nebraska
CC 166 Choice of Perennial Grasses for Forage Production and Erosion Control
CC 167 How to Use Pastures
CC 168 Green Chop Feeding
CC 169 Does it Pay to Improve Your Pastures?
CC 170 Irrigated Pastures
CC 171 Pasture Weed Control

Your COLLEGE OF AGRICULTURE has several BRANCH OFFICES

The College of Agriculture of your University of Nebraska has a "local office" convenient to you, wherever you may live in this wide state.

These "local offices," of course, are the County Extension offices in most Nebraska counties. There also are the "branch offices" of the Experiment Stations at Ft. Robinson, North Platte, Mitchell, Alliance and Concord.

Your County Agent has a wide variety of free bulletins written by Nebraska agricultural scientists and directed at Nebraska conditions and problems. We urge you to use your County Agent and your County Home Agent. They are there to serve you.

Dean W. V. LAMBERT,
College of Agriculture
University of Nebraska